What is claimed is:

1. A mesoporous silica/fluorinated polymer composite material, comprising:

10 to 70 parts by weight of hydrophobic modified mesoporous silica having a pore size of 0.1 to 50nm, and

30 to 90 parts by weight of fluorinated polymer.

2. The composite material as claimed in claim 1, wherein the surface of the hydrophobic modified mesoporous silica is chemically hydrophobically modified.

3. The composite material as claimed in claim 2, wherein the surface of the hydrophobic modified mesoporous silica is chemically bonded to a hydrophobic modifier.

4. The composite material as claimed in claim 3, wherein the hydrophobic modifier is hydrophobic silane, halosilane, haloalkane, or a combination thereof.

5. The composite material as claimed in claim 1, wherein the surface of the hydrophobic modified mesoporous silica is physically hydrophobically modified.

6. The composite material as claimed in claim 5, wherein the hydrophobic modified mesoporous silica is coated with a hydrophobic modifier.

7. The composite material as claimed in claim 6, wherein the hydrophobic modifier is silane, halosilane, haloalkane, or a combination thereof.

8. The composite material as claimed in claim 7, wherein the silane is p-chlorotolyl trimethoxy silane, amino ethyl amino trimethoxy silane, phenyl trimethoxy silane, amino

ethyl amino propyl trimethoxy silane, 3,3,3-trifluoropropyltrimethoxysilane), or a combination thereof.

9. The composite material as claimed in claim 1, wherein the fluorinated polymer is polytetrafluoroethylene, polyhexafluoropropene, tetrafluoroethylene-hexafluoropropene copolymer, alkoxy fluoroethylene copolymer, ethylene-tetrafluoroethylene copolymer, or a combination thereof.

10. The composite material as claimed in claim 1, wherein the pore of the hydrophobic modified mesoporous silica is square or hexagonal.

11. The composite material as claimed in claim 10, wherein the pore of the hydrophobic modified mesoporous silica is regularly arranged.

12. The composite material as claimed in claim 10, wherein the pore of the hydrophobic modified mesoporous silica is irregularly arranged.

13. The composite material as claimed in claim 1, wherein the hydrophobic modified mesoporous silica is granular.

14. The composite material as claimed in claim 1, wherein the hydrophobic modified mesoporous silica is fibrous.

15. A mesoporous silica/fluorinated polymer composite material, comprising hydrophobic modified mesoporous silica having a pore size of 0.1 to 50nm and fluorinated polymer in proportion such that the mesoporous silica/fluorinated polymer composite material has dielectric constant, dissipation factor, and coefficient of thermal expansion less than 4, 0.04, and 60ppm/°C, respectively.

16. The composite material as claimed in claim 15, wherein the surface of the hydrophobic modified mesoporous silica is chemically hydrophobically modified.

17. The composite material as claimed in claim 16, wherein the surface of the hydrophobic modified mesoporous silica is chemically bonded to a hydrophobic modifier.

18. The composite material as claimed in claim 17, wherein the hydrophobic modifier is hydrophobic silane, halosilane, haloalkane, or a combination thereof.

19. The composite material as claimed in claim 15, wherein the surface of the hydrophobic modified mesoporous silica is physically hydrophobically modified.

20. The composite material as claimed in claim 19, wherein the hydrophobic modified mesoporous silica is coated with a hydrophobic modifier.

21. The composite material as claimed in claim 20, wherein the hydrophobic modifier is silane, halosilane, haloalkane, or a combination thereof.

22. The composite material as claimed in claim 21, wherein the silane is p-chlorotolyl trimethoxy silane, amino ethyl amino trimethoxy silane, phenyl trimethoxy silane, amino ethyl amino propyl trimethoxy silane, 3,3,3-trifluoropropyltrimethoxysilane, or a combination thereof.

23. The composite material as claimed in claim 15, wherein the fluorinated polymer is polytetrafluoroethylene, polyhexafluoropropene, tetrafluoroethylene-hexafluoropropene copolymer, alkoxy fluoroethylene copolymer, ethylene-tetrafluoroethylene copolymer, or a combination thereof.

24. The composite material as claimed in claim 15, wherein the pore of the hydrophobic modified mesoporous silica is square or hexagonal.

25. The composite material as claimed in claim 24, wherein the pore of the hydrophobic modified mesoporous silica is regularly arranged.

26. The composite material as claimed in claim 24, wherein the pore of the hydrophobic modified mesoporous silica is irregularly arranged.

27. The composite material as claimed in claim 15, wherein the hydrophobic modified mesoporous silica is granular.

28. The composite material as claimed in claim 15, wherein the hydrophobic modified mesoporous silica is fibrous.